Re-implementation of SvxGhit & SvxGhitList Classes etc.

Svx Meeting
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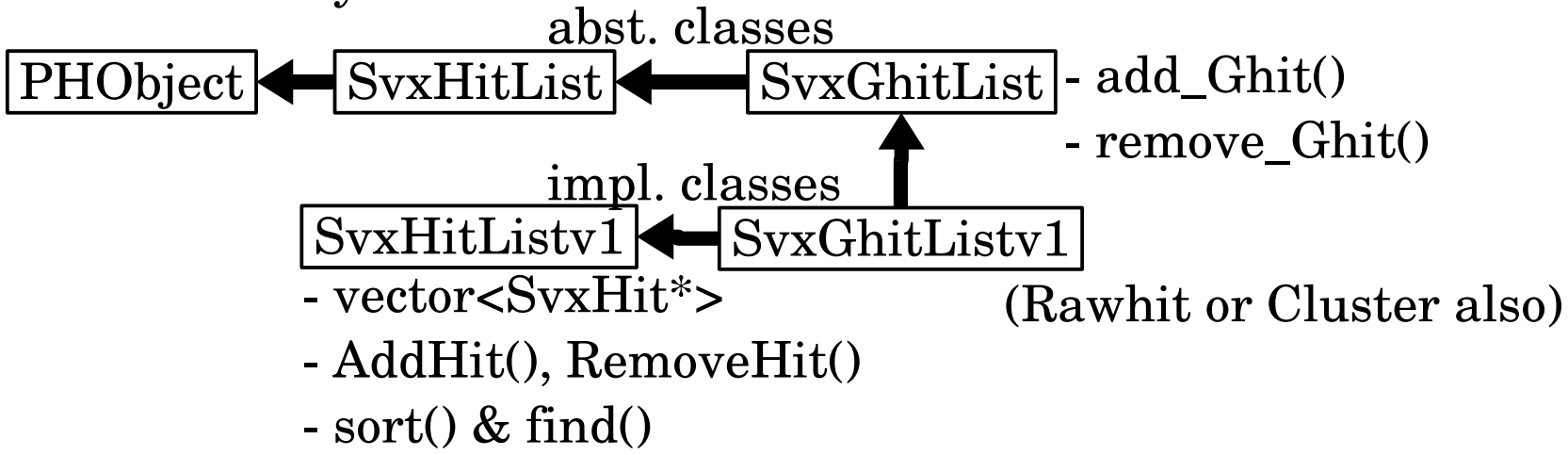
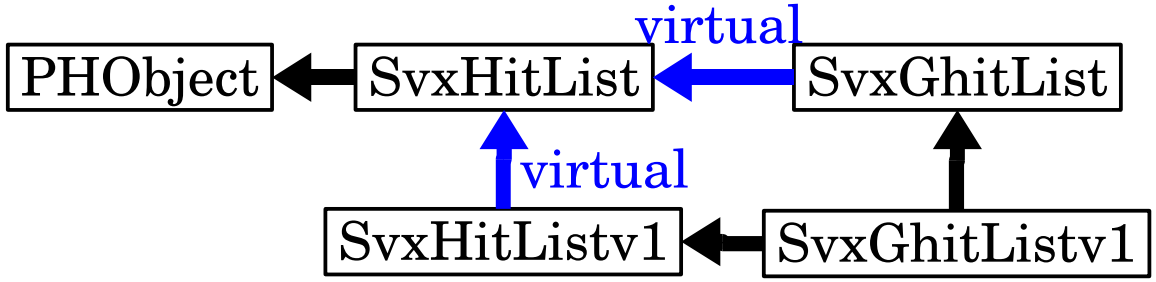
Modification of Hit & Hit-List Classes

Presented on Aug. 15

- Previous implementation
  - TClonesArray to store and sort SvxGhit*'s ... poor sortability
  - each list class (SvxGhitList etc.) has its own sorting and finding functions
- New implementation
  - STL vector to store and sort SvxGhit*'s
  - class hierarchy



  - note: the hierarchy below is thought to be ideal, but couldn't be written out to ROOT file due to virtual inheritance



Replacement of Hit-Relator Classes (SvxGhitRawhit etc.)

- Each hit (SvxGhit) has child/parent-hit IDs (SvxRawhit & SvxCluster)
  - with `std::vector<int> m_assoc_hitID[2]`
  - this is simpler and easier to access

```
// SvxGhit* ghit,     SvxRawhitList* rawhit_list
for (int i = 0; i < ghit->get_n_assoc_rawhit(); i++) {
    int id_raw = ghit->get_assoc_rawhit(i);
    int idx_raw = rawhit_list->FindHitIndex(id_raw);
    assert(idx_raw >= 0);
    SvxRawhit* rawhit = rawhit_list->get_Rawhit(idx_raw);
    //...
}
```

- Hit-relator classes are no longer used
  - you may need to rewrite your analysis codes and macros

Performance

- Hit lists are fully sorted
  - by svxSection, layer, ladder, sensor
  - for SvxRawhitList, also by sensorSection, sensorType, channel
  - order same as in real data

- Calculation time

	process_event()	other	total
central Au+Au	0.4, 2.0 sec	4.0, 3.0	4.4, 5.0
single particle	0.06, 1.0	0.20, 0.1	0.26, 1.1

Red: new, black: old (TClonesArray, full sort on)

  - ROOT needs longer time in writting *STL vector* to ROOT file

- Commit into CVS soon